THE OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING FOR RESEARCH AND TECHNOLOGY

NEWSLETTER

MAR-APR 2021

INNOVATING TODAY TO PROTECT OUR FUTURE

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FEATURED UPDATES

DoD Science and Technology Executive Committee Meets for Annual Strategic Review

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The DoD's Science and Technology Executive Committee (S&T ExCom), chaired by the Director of Defense Research and Engineering for Research and Technology, held its 2021 Strategic Review from April 29-30, 2021. The S&T ExCom aligns DoD S&T investments to support Warfighter priorities and bridge capability gaps across the Military Departments, the Joint Staff, and Defense Agencies. This annual summit provides a critical opportunity for ExCom members to align their organizations' activities and goals with Department priorities. Committee members – made up of senior leadership from the Office of the Secretary of Defense, Military Services, and Defense Agencies – discuss their current activities, future objectives, and collaboration opportunities in order to maintain the Nation's technological advantage. The Honorable Dr. Kathleen Hicks, Deputy Secretary of Defense, provided remarks. Ms. Barbara McQuiston, the Director of Defense Research and Engineering for Research and Technology who is currently performing the duties of the Under Secretary of Defense for Research and Engineering, also spoke to Committee members. Learn more at: https://www.cto.mil/dod-st-exec-comm-annual-strat-rev/.

DoD Science and Technology Executive Committee Announces Winner of FY21 Applied Research for Advancement of S&T Priorities Program Award

Aerial view of the United States Pentagon, the Department of Defense headquarters in Arlington, Virginia, near Washington DC, with I-395 freeway and the Air Force Memorial and Arlington Cemetery nearby. Image Sourced from iStock

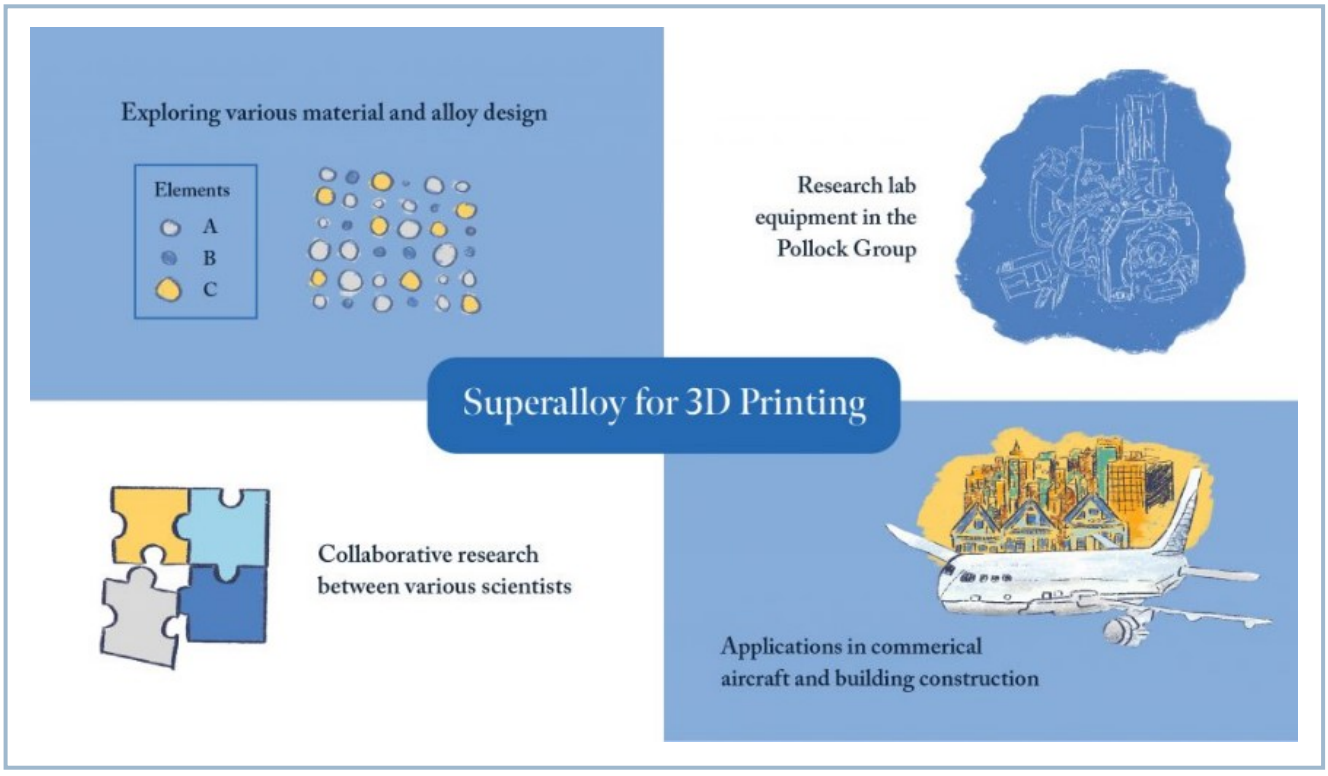
The DoD's Science and Technology Executive Committee (S&T ExCom), led by the Office of the Under Secretary for Research and Engineering (OUSD(R&E)), announced the winner of the Fiscal Year 2021 Applied Research for the Advancement of S&T Priorities (ARAP) Program Award Competition on April 13, 2021. The U.S. Naval Research Laboratory's (NRL) Naval Center for Space Technology (NCST) in partnership with the Air Force Research Laboratory, Army Research Laboratory, and Missile Defense Agency, submitted the winning proposal "Surface Morphing and Adaptive Structures for Hypersonics," or SMASH. The three-year, $45 million applied research program will support approximately 80 Federal scientists and engineers across three Military Services and the Missile Defense Agency as they seek to develop the necessary materials, systems, and tools to increase hypersonic range, platform capacity, lethality, and maneuverability. Additionally, the program will support at least 20 new graduate students who participate through the agencies' academic partners. For more information, visit https://www.defense.gov/Newsroom/Releases/Release/Article/2588374/dod-science-and-technology-executive-committee-announces-winner-of-fy21-applied/.

BASIC RESEARCH

DoD Research Fellows Advance Promising Discoveries

Laboratory University Collaborative Initiative (LUCI) Fellow Dr. Keith Knipling of the Office of Naval Research and Dr. Oleg Senkov of the Air Force Research Laboratory collaborated with Vannevar Bush Faculty Fellow (VPFF) Tresa Pollock and other researchers to discover a revolutionary way to enhance our ability to predict when certain alloys' physical properties will prove valuable for various technology applications. In their breakthrough research, Drs. Knipling, Senkov, and Pollock and their team developed a synergistic use of computational, machine learning, and experimental approaches combined with 3D printing to theoretical designs for novel multiprinciple element alloys (MPEAs). To read more about their research, please visit: https://science.sciencemag.org/content/370/6512/95.abstract.

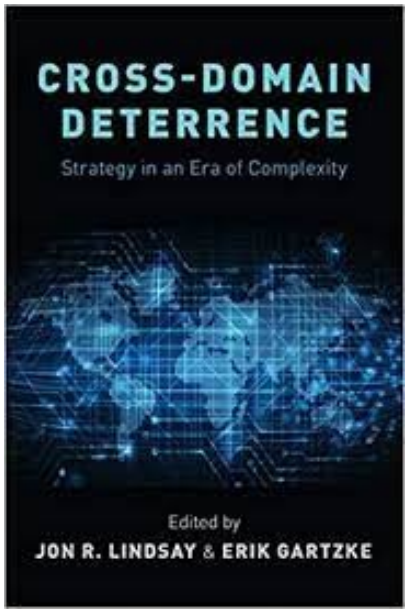
Additionally, Pollock led a team of scientists to create a new superalloy for 3D printing that has the potential to revolutionize commercial aircraft industry. This new alloy, along with unique additive processing conditions, maintains its properties in demanding environments – a promising development with energy, space, and even nuclear applications. This discovery could possibly advance commercial aircraft engine construction, which will lead to increased passenger safety. To learn more, visit https://www.nature.com/articles/s41467-020-18775-0.



A Basic Research Office-funded collaboration could help develop new class of alloys that might advance additive manufacturing use in demanding environments such as flight.

Minerva-Funded Researcher Eric Gartzke's Book Informs National Defense Strategy

Minerva researcher Eric Gartzke's book, Cross-Domain Deterrence: Strategy in an Era of Complexity (Oxford University Press, 2019) has become a vital reference for the DoD team formulating the new National Defense Strategy. This book was one of many high-impact publications to come out of Gartzke's Minerva project, "Deterring Complex Threats: The Effects of Asymmetry, Interdependence, and Multi-polarity on International Strategy." Gratzke's work, alongside that of other Minerva researchers, has proven relevant to Defense Secretary Lloyd Austin's focus on integrated deterrence.



Eric Gartzke's book, Cross-Domain Deterrence: Strategy in an Era of Complexity (Oxford University Press, 2019), is expected to help inform the next National Defense Strategy.

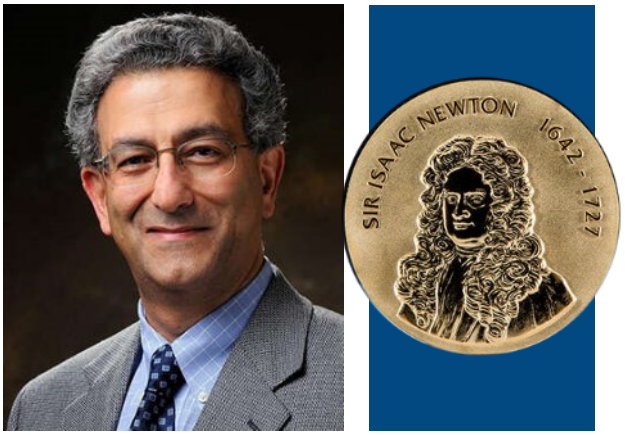
Vannevar Bush Faculty Fellow Professor Jennifer Lewis Changes the Game in Soft Robotics and 3D Printing

Jennifer Lewis invented the "octobot," an entirely soft robot, that is powered without electronics. Instead, microfluidic channels containing chemical reactions automate its movements.

Soft robotics could revolutionize how humans interact with machines and have several advantages over conventional robots such as safe human-machine interaction, adaptability to wearable devices, simpler gripping design, and so on. Yet for decades, researchers have struggled to build entirely soft-bodied robots. In 2016, Vannevar Bush Faculty Fellow Professor Jennifer Lewis led a research team that pioneered the first autonomous, entirely soft robot. The team created the robot using a hybrid assembly approach to rapidly 3D print each of the robot's functional components. Other scientists and researchers have cited and used Lewis's groundbreaking discovery to develop technology such as the Massachusetts Institute of Technology wireless actuators. Recently, Lewis pivoted her research during the COVID-19 pandemic to design and 3D print face shields for frontline responders.

DoD Basic Research Awardees Widely Recognized for Their Transformative Work

The 57 DoD-supported Vannevar Bush Faculty Fellows (VBFF) have received over 200 awards for their research. Researchers funded through DoD's Minerva Research Initiative have created new fields, discovered new insights, and won prestigious awards – including 11 domestic and international Academies of Science and Engineering Awards, and 3 National Academy of Inventors Awards. Additional awardees include:



VBFF Nadar Engetha was awarded the 2020 Isaac Newton Medal and Prize.

- VBFF Nadar Engetha was awarded the 2020 Isaac Newton Medal and Prize for "groundbreaking innovation and transformative contributions to electromagnetic complex materials and nanoscale optics, and for pioneering development of the fields of near-zero-index metamaterials, and material-inspired analogue computation and optical nanocircuitry."
- VBFF Chad Mirkin received the Wilhelm Exner Medal for scientific achievements and contributions that have had a direct impact on business and industry.
- VBFF Teri Odom received her 2020 Centenary Prize from the Royal Society of Chemistry from her VPFF-supported research.

Minerva Awardees Michele Gelfand, Distinguished University Professor in the Department of Psychology at the University of Maryland, College Park and Robert Jervis, Adlai Stevenson Professor of Political Science in the School of International and Public Affairs at Columbia University, were recently elected as two of 120 new members of the National Academy of Sciences.

Congratulations Michele Gelfand! Elected to the National Academy of Sciences

Left: Minerva Awardee Michele Gelfand, Distinguished University Professor in the Department of Psychology at the University of Maryland, College Park was recently elected as one of 120 new members of the National Academy of Sciences.

Image Sourced from iStock

DTIC Rolls Out Improved Tool for Submitting Scientific Documents on SIPRNet

In mid-April 2021, the Defense Technical Information Center (DTIC) unveiled a new online tool for submitting classified scientific and technical documents for inclusion in DTIC's repository of 4.7 million records.

The tool – available to authorized DoD and Federal Agency personnel – makes it more efficient for the defense research community to securely submit DoD-funded work from the Secret Internet Protocol Router Network (SIPRNet). DTIC's SIPRNet presence is a key resource that connects evolving Warfighter needs with the defense research community's scientific work.

An updated look and feel, similar to DTIC's existing submission platform for controlled unclassified documents, enhances ease of use. Automated acknowledgment and immediate tracking number assignment help the submitter follow a document's progress prior to its availability to authorized users. Additional data fields collected during submission allow authorized personnel to conduct enhanced document searches.

DTIC Publishes Inaugural Newsletter with Latest Highlights on DoD Science and Technology Activities

The Defense Technical Information Center (DTIC) published its inaugural newsletter on March 31, 2021. Available to DoD and other Federal Government personnel, the newsletter highlights top scientific and technical stories and events, connecting them to DTIC-related resources within the access-controlled R&E Gateway. As the manager of DoD's body of scientific knowledge, DTIC aims to provide the defense scientific community with insights into how DTIC's digital applications and services can facilitate their work. The newsletter is available to authorized users at https://go.usa.gov/xHCTW.

DTIC Releases Next Incremental Version of Horizons Tool

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DTIC continues to enhance Horizons, adding new data sources and linking records across disparate information sources to help users better understand the state of the Department's science and technology (S&T) activities. The latest release, which occurred in mid-May 2021, adds contracts and awards data from Defense Pricing and Contracting's Procurement Business Intelligence Service (PBIS) database, project-level data for Research, Development, Test and Evaluation (RDT&E) budget justifications, linkages between RDT&E and Procurement budget justifications, and drill-down capability from visualizations into Program Element summaries. With Horizons, DTIC seeks to lower the entry barrier to understanding these types of data by providing accessible yet informative visualizations and linkages that convey how the Department's S&T efforts mature over time. Horizons is available to authorized users at https://www.dtic.mil/bt/ui.

DTIC Releases First External Beta of GUided Assistance for Release Determinations (GUARD) Application

The GUided Assistance for Release Determinations (GUARD) application is intended to help public affairs officials, security reviewers, and authors of Scientific and Technical Information (STI) make better release determinations for their content. DTIC released the first external beta version of the GUARD application to select mission partners during the first week of May 2021. The tool uses artificial intelligence, machine learning, and natural language processing techniques to compare a given document against DTIC's collection in multiple dimensions – such as text content, alignment to Modernization Priorities, and funding source – and provide a comparative risk assessment for the document. Further, Department resources will be provided to educate users about release determination policy for Controlled Unclassified Information. GUARD is currently in iterative development, and DTIC will continue to work with mission partners to evaluate the quality of its assessments to mature the tool.

SCIENCE & TECHNOLOGY

BOOST Program Selects Five Proposals for $5M Award to Advance Biotechnology Research and Products

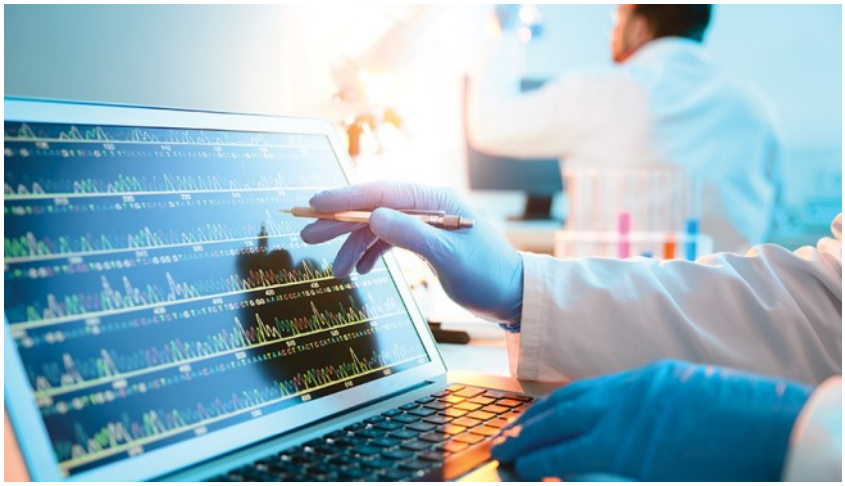

Image Sourced from iStock

The Biotech Optimized for Operational Solutions and Tactics (BOOST) program, overseen by the Office of the Director of Defense Research and Engineering for Research and Technology, has awarded $5 million to five selected proposals for Fiscal Year 2021. BOOST aims to connect Military Service and Defense Agency biotechnologists with industry researchers and developers, all with the goal of fielding viable biotechnology products for our Warfighters. In total, the review committee reviewed 12 proposals. The selected proposals came from Naval Research Laboratory; U.S. Army Combat Capabilities Development Command (CCDC) – Chemical Biological Center; CCDC – Solider Center; and Naval Air Warfare Center Weapons Division – China Lake. https://www.defense.gov/Newsroom/Releases/Release/Article/2600172/department-of-defense-announces-fy21-boost-program-awardees/.

DoD Announces $179M in Funding Awards in Multidisciplinary University Research Initiative Competition

DoD has announced $179 million in funding awards to 25 teams that participated in the Fiscal Year 2021 Multidisciplinary University Research Initiative (MURI) Competition. The winning teams, which represent 57 academic institutions nationwide, will receive five-year grants – contingent upon satisfactory research progress and the availability of funds – to pursue basic research that spans multiple scientific disciplines. Since its inception in 1985, the tri-Service MURI program has convened teams of investigators to facilitate the advancement of newly-emerging technologies. Complementing the Department's single-investigator basic research grants, the highly competitive MURI program has made immense contributions to both national defense and society at large. Learn more at: https://www.cto.mil/2021-muri/.

DOD INNOVATORS SPOTLIGHT SERIES

Awardees Across the Defense Enterprise Share Their Cutting-edge Work and Best Practices

The Office of the Director of Defense Research and Engineering for Research and Technology awards exceptional personnel across the Department in the fields of Research and Development (R&D); Science, Technology, Engineering, and Mathematics (STEM); and Technology Transfer (T2) with the following awards:

- Laboratory Scientist of the Quarter Award recognizes extraordinary service by DoD scientists and engineers that demonstrate exceptional work on behalf of the Department.
- STEM Advocate of the Quarter Award recognizes outstanding STEM education and outreach efforts that further DoD's mission.
- T2 Advocate of the Quarter Award recognizes outstanding T2 efforts that further DoD's mission.

The DoD Innovators Spotlight Series provides opportunities for these award winners to virtually present and share the innovative work and best practices they have been recognized for by the Department. These virtual events are monthly, sometimes twice a month, and are open to the public. To register and learn more information about this series and upcoming presenters, please go to https://events.sa-meetings.com/ehome/606631/home/ (a one-time registration is required and will initiate automatic notifications for future events).

Scheduled Upcoming Events:
May 18, 2021 at 11:45am EDT
June 01, 2021 at 11:45am EDT
June 22, 2021 at 11:45am EDT
July 20, 2021 at 11:45am EDT

Previously Featured:
The inaugural DoD Innovators Spotlight Series event occurred on February 23, 2021, and featured presentations by Laboratory Scientist Award winners: Dr. Igor Linkov, U.S Army Corps of Engineers, Engineer Research and Development Center; and Dr. Khanh Pham, Air Force Research Laboratory, Space Vehicles Directorate, Future Space Communications Program.

Dr. Igor Linkov

Dr. Khanh Pham

The second DoD Innovators Spotlight Series event occurred on March 23, 2021, and featured presentations by STEM Advocate of the Quarter award winner Ms. Tiffany Owens, Naval Surface Warfare Center, Dahlgren Division, and T2 Advocate of the Quarter award winner Dr. Edward Diehl, U.S. Army Medical Research and Development Command' s Office of Medical Training Transfer.

The third DoD Innovators Spotlight Series event occurred on April 20, 2021 and featured presentations by Naval Surface Warfare Center (NSWC) Crane, including the T2 Advocates of the Quarter award winners Ms. Annie Bullock-Yoder, T2 and Intellectual Property Specialist; Ms. Jenna Dix, T2 Director; and STEM Advocate of the Quarter award winner Mr. Steven Corbin, Chief Engineer for the Maneuver, Surveillance and Engagement Division. Additionally, Dr. Angie Lewis, Technical Director of NSWC Crane Division – the first female to hold this position and the most senior civilian at NSWC Crane – provided introductory remarks about the innovative and impactful work being done at NSWC Crane by its renowned civilian workforce.

Ms. Tiffany Owens

Dr. Edward Diehl

Ms. Annie Bullock-Yoder

Ms. Jenna Dix

Mr. Steven Corbin

Angie Lewis

DoD Promotes Science and Technology Education at Virtual, Interactive USA Science and Engineering Festival

On April 21-23, 2021, USA Science and Engineering (USASEF), one of 19 DoD Science, Technology, Education, and Mathematics (STEM) Education Consortium (DSEC) partners, hosted the "USASEF X-STEM All Access" virtual event, which was free-of-charge and open to the public. The event provided educational and interactive online STEM experiences for 6-12th graders through a series of pre-recorded videos from STEM visionaries. Dr. JihFen Lei, Principal Deputy and Acting Director of Defense Research and Engineering for Research and Technology, provided video remarks on April 22, 2021 that promoted STEM education and career pathway opportunities. For more information and to view Dr. Lei's recorded remarks, please visit https://usasciencefestival.org/x-stem-all-access-21/.

DoD Manufacturing Education Engineering Program Partner Hosts Virtual Career and Internship Expo for Students

DoD's Science, Mathematics, and Research for Transformation (SMART) Program representatives and Army, Navy, and Air Force Science, Technology, Engineering, and Mathematics (STEM) representatives presented educational and workforce opportunities across the Department during the MEEP partner, University of Texas Rio Grande Valley (UTRGV) I-DREAM 4D Career and Internship Virtual Expo on February 23, 2021. UTRGV is a DoD Manufacturing Education Engineering Program (MEEP) partner. Approximately 300 post-secondary students registered for this event. UTRGV's awarded project, I-DREAM 4D, launched a consortium comprised of five higher education institutions, including UTRGV, UT Austin, UT San Antonio, Virginia Tech, and Virginia State University; national research centers; national laboratories; defense manufacturers; local high school districts; and community colleges. The project's goal supports U.S. defense manufacturing through exposure, education, and engagement to cultivate an educational ecosystem drawing young talent to additive and smart manufacturing and innovations in lightweight materials, structures, and systems. For more information about I-DREAM 4D initiative, please visit https://idream4d.org/. To learn more about DoD STEM partners, please visit https://dodstem.us/about/partners/.

DoD University Affiliated Research Center to Build Artificial Intelligence Mentoring Platform and Increase Participation in STEM

The University of Southern California (USC) Institute for Creative Technologies (ICT) is developing an artificial intelligence (AI) mentor called CareerFair.ai. USC-ICT is a DoD University Affiliated Research Center (UARC) and current National Defense Education Program (NDEP) awardee. To understand the challenges of building a robust, diverse Science, Technology, Engineering, and Mathematics (STEM) workforce, USC-ICT is collaborating with California State University, Fullerton (CSUF) to study ways to increase STEM participation, such as amplifying STEM mentoring.

The purpose of CareerFair.ai is for: a) students to interact with virtual STEM professionals in DoD priority areas for free; and b) STEM professionals to build their own "virtual mentors." The "virtual mentors" will use machine learning to identify the most appropriate response to an input question among video-recorded answers, which enables a simulated conversation with mentors on their career insights and experiences. The project's goal is to develop a sustainable virtual career fair where students can talk (in simulated conversations) 24/7 and free-of-charge to a diverse array of professionals to learn about different STEM career pathways.

For more information, please visit https://ict.usc.edu/news/press-releases/researchers-to-build-mentoring-platform-leveraging-ai-to-increase-participation-in-stem/. To learn more about DoD STEM partners, please visit https://dodstem.us/about/partners/.

DoD Partner Georgia Tech Research Institute Collaborates with Historically Black Colleges and Universities, Minority Serving Institutions to Accelerate Diverse Workforce Development

The Georgia Tech Research Institute (GTRI), a DoD University Affiliated Research Center (UARC), and the Army Combat Capabilities Development

Command (CCDC) Aviation and Missile Center (AvMC) hosted a kickoff meeting on March 5, 2021 for the Diverse Workforce Development project. Representatives from DoD, Tougaloo College, Tennessee State University, Elizabeth City State University, Morgan State University, and Tuskegee University attended.

This three-year effort seeks to leverage the Army's long-term strategic partnership with GTRI to accelerate the availability of a diverse workforce and qualified research institutions from among Historically Black Colleges and Universities (HBCUs) and Minority Serving Institutions (MSIs) by leveraging GTRI's UARC Core Competencies. To meet this objective, CCDC AvMC requires GTRI to actively seek out potential research partners among HBCUs and MSIs; match the competencies with research requirements defined by DoD in GTRI's portfolio of task orders; and form partnerships, represented by subcontracts, to perform the research in an effort to build the HBCUs' and MSIs' technical and contracting maturity. Further, DoD requires GTRI to train and mentor the HBCU and MSI communities and the existing government workforce in GTRI's UARC Core Competencies.

DoD Science, Mathematics and Research for Transformation SMART Program Hosts Scholarship-for-Service Webinar

The Science, Mathematics and Research for Transformation (SMART) Program hosted the Fostering a Community of Diversity: Empowering Future DoD Leaders webinar on February 24, 2021. The webinar highlighted SMART Scholar accomplishments and highlighted the Department's diverse workforce. Guest speakers included Ms. Evelyn Kent, Program Director for DoD Historically Black Colleges and Universities/Minority Serving Institutions; Ms. KeeAnia Kinkacha, a Phase 1 SMART Scholar attending North Carolina Agricultural and Technical State University and studying information technology; and Ms. Oliva Tomlinson, a Phase 1 SMART scholar attending Spelman College and studying environmental science. The webinar recording has been saved to the SMART Program website at https://www.smartscholarship.org/smart.

Air Force Research Laboratory Scientists, Engineer Honored with Black Engineer of the Year Awards

The Air Force Research Laboratory (AFRL) at the Wright-Patterson Air Force Base (AFB) in Ohio hosted the virtual 2021 Black Engineer of the Year Awards (BEYA) Science, Technology, Engineering, and Mathematics (STEM) Conference on February 11-13, 2021. This year's overarching theme, "Stand up! Step up! Make the Change," was a call to action for all participants, including K-12 and college students, professionals, executive leadership, educators, military leaders and veterans, and more. Three AFRL researcher scientists received national recognition for their hard work. The recipients included Dr. Nydeia Bolden-Frazier from AFRL's Munitions Directorate at Eglin AFB, who received the BEYA Professional Achievement in Government Award; Dr. Candice Hatcher-Solis from AFRL's 711 Human Performance Wing, who received the BEYA Most Promising Scientist in Government Award; and 1st Lt. Samuel Nyamekye from AFRL's Aerospace Systems Directorate, who received the BEYA Most Promising Engineer in Government Award.

Each of the AFRL honorees spoke about the abundant opportunities available at AFRL that allowed them to expand their horizons in their chosen field. The awardees participated in STEM outreach programs to promote diversity, equity, and inclusion, professional development, and mentorship. In addition, awardees and their amazing teams had the opportunity to educate the broader science and engineering community at AFRL on other focus areas such as hypersonics. For more information, please visit https://www.afrl.af.mil/News/Article/2508748/the-sky-is-just-the-beginning-not-limit-for-afrl-scientists-engineer-honored-wi/.

Maintaining Technology Advantage Collaborates with International Partners on S&T Protection Efforts

In support of Science and Technology (S&T) protection efforts, the Maintaining Technology Advantage (MTA) directorate in the Strategic Technology Protection and Exploitation (STP&E) office worked closely with international partners on S&T protection areas of mutual concern by participating in the U.K./U.S. Quantum Tech Protection Working Group meeting in March 2021. MTA also participated in the Five Power Maintaining Technology Advantage Working Group meeting in March 2021 alongside the U.K., France, Germany, and Italy to focus on critical emerging technology strategies, responses to great power competitors like China, and cybersecurity.

DoD MII-funded Project Earns $89M Contract with U.S. Army to Help Save Soldiers' Lives

LIFT, the Detroit-based, DoD-supported national Manufacturing Innovation Institute (MII), announced that the U.S. Army awarded a three year, $89M contract for one of the Institute's innovation projects. The project will further develop and scale an Anti-lock Braking System/Electronic Stability Control (ABS/ESC) system and provide validation of quality retrofit installation on the Army's Humvee fleet. The initial project, completed in 2017, successfully retrofitted 10 Michigan National Guard vehicles with an optimized ABS/ESC system and made the system kit available for purchase by military units worldwide. LIFT funded and managed that project in collaboration with Ricardo Defense Systems, who received the current award to provide up to 9,480 critical safety improvement retrofit kits. "This successful technology transfer into the marketplace and into the hands of the military to improve soldier safety is exactly why LIFT exists as a public-private partnership," said Nigel Francis, CEO and Executive Director of LIFT. "We are proud of the role we played to fund and manage this project and help it get to a position where it could be scaled up and implemented into the hands of the Warfighter.

DoD Manufacturing Innovation Institute Support for COVID-19 Vaccine Development Project Recognized in Prominent D.C. News Outlet

Respected D.C. news outlet The Hill featured a Manufacturing Innovation Institute (MII)-funded COVID-19 vaccine development project led by the University of Rochester Medical Center in a March 30, 2021 article. The AIM Photonics MII supported the project using Coronavirus Aid, Relief, and Economic Security Act funds. Scientists are developing a diagnostic platform that detects multiple viruses –including COVID-19 – in under a minute from a single drop of blood. The sensor that detects the viruses uses an optical chip

no larger than a grain of rice.

The article author recognized the benefit of public-private partnerships like the MIIs to the pandemic response, saying "Undoubtedly, we would not have gotten to this place so quickly without the strong partnership between the federal government and research colleges and universities. Their efforts serve as stark reminder of why Congress should invest in fundamental research and the STEM workforce that serves as the backbone of the American scientific enterprise."

SME Recognizes DoD Manufacturing Innovation Institute Directors among "25 Leaders Transforming Manufacturing"

SME, a professional association committed to advancing manufacturing and developing a skilled workforce, named the Executive Directors of DoD Manufacturing Innovation Institutes LIFT and Advanced Robotics for Manufacturing (ARM) Institute as leaders who are driving revolutionary change in manufacturing in the most recent issue of Smart Manufacturing Magazine.

The magazine recognized Nigel Francis, CEO and Executive Director of LIFT (which focuses on lightweight materials), and Ira Moskowitz, CEO of ARM Institute, as "25 Leaders Transforming Manufacturing." In describing the honorees, SME noted, "The need for leadership in smart manufacturing cannot be overstated: Making revolutionary changes can be arduous. But the leaders who have emerged in this industry show us it can also be exhilarating. To assemble this group of luminaries, Smart Manufacturing took into account the fact that big change is happening inside large corporations, startups, public-private partnerships, and standards organizations."

BioFabUSA Manufacturing Innovation Institute Launches New National Technology Roadmap for Pandemic Response and Recovery

BioFabUSA, the Advanced Regenerative Manufacturing Innovation Institute (MII) supported by DoD, recently released the National Technology Roadmap for Pandemic Response and Recovery. This Roadmap outlines a technology-based action plan for strengthening and accelerating U.S. pandemic preparedness and response. The Roadmap will ensure longevity through intentional regulatory and deployment frameworks, optimized predictive capabilities, stronger data infrastructure, and manufacturing and supply chain networks, all of which drive down response time on everything from personal protective equipment to vaccine development and delivery.

The Roadmap, a project funded by the National Institute of Standards and Technology through the Coronavirus Aid, Relief, and Economic Security Act, recommends specific technology development and commercialization efforts that the manufacturing sector can implement immediately to respond to COVID-19. The Roadmap also addresses long-term research and development priorities that will improve future pandemic readiness.

To develop this national initiative, BioFabUSA collected input from more than 75 multidisciplinary experts and senior leaders on the frontlines of pandemic response who represent academia, government, manufacturers, healthcare, supply chain, data infrastructure, biosecurity, professional societies, and consortia.

Manufacturing Leadership Council Awards MxD Manufacturing Innovation Institute for Outstanding Achievement in

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Four Categories

The Manufacturing Leadership Awards recognized MxD, the DoD-funded Digital Manufacturing Institute, as a winner for outstanding achievement in four categories: enterprise integration technology, industrial internet of things (IoT), talent management, and next-generation leadership. Winning submissions include MxD's Cyber Box, a portable demo on implementing cybersecurity practices that MxD can take to institution partners, manufacturers, and solutions providers. On the workforce side, MxD won for its Hiring Guide: Cybersecurity in Manufacturing. This indispensable roadmap for manufacturing executives, Human Resources departments, educators, and policymakers describes job roles, recommends how to train and provide continuing education for workers on these jobs, and breaks out detailed descriptions for a selection of specific roles crucial to the future of digital manufacturing.

Resilient Systems Hosts Quarterly Software Assurance Community of Practice

In March 2021, Resilient Systems (RS) co-chaired the quarterly Software Assurance (SwA) Community of Practice (CoP) alongside the National Nuclear Security Administration (NNSA) and the National Security Agency (NSA). The technical exchange included software assurance impacts and mitigations for SolarWinds, Joint Federated Assurance Center (JFAC) projects that will advance DoD software assurance, and the DoD/NNSA joint software subversion identification methodology. Over 150 participants attended the virtual meeting. In addition to attendees from NNSA, NSA, and RS, attendees from U.S. Air Force, U.S. Army, and U.S. Navy also participated. The SwA CoP continues to demonstrate its effectiveness in bringing together components from across DoD and the Federal Government to exchange SwA best practices.

THE OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING FOR RESEARCH AND TECHNOLOGY

PROVIDING SCIENCE AND TECHNOLOGY LEADERSHIP THROUGHOUT DOD TO MEET THE CHALLENGES OF TODAY AND TOMORROW

USD(R&E)

Office of the Under Secretary of Defense,
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